

23. The Elephant-Seals of Kerguelen Land.
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(Plates I. & II.†)

The hunting of the Elephant-Seals of the southern hemisphere, on a scale which threatens these interesting animals with extinction, began at the South Georgia group of islands in the South Atlantic, which are under the jurisdiction of Great Britain, and form part of the Falkland Islands dependencies.

A factory for whaling was established in the year 1905-6, by a Norwegian, Captain C. A. Larsen, of Antarctic exploration fame. This enterprise proved so successful that other establishments for utilizing the larger cetacea were soon erected. As a "side-issue," the capture of the Elephant-Seals was also included, and in consequence their numbers must have been so reduced that, unless the British Government introduce legislation forbidding the capture of these animals for, say, 10 years, they will become extinct. Such legislation ought also to embrace the protection of the Fur-Seals.

At the Crozet Islands, situated in the South Indian Ocean, and which are under the jurisdiction of France, a Norwegian steam sealing-factory made a great haul of Elephant-Seals in 1907, and three years later a French floating-factory cleared the beaches of the remnant left by the Norwegian vessel. In the year 1908 a Norwegian company established a whaling factory at Kerguelen Land in the South Indian Ocean. This also is a possession of France, and in the course of four years (1909-1913) Elephant-Seals were killed in such great numbers that, unless the Government of France takes steps for protecting them from destruction by enforcing strict protection, say for 10 years, their extermination is practically certain. The Elephant-Seals and Fur-Seals of Marion, Prince Edward, and the Crozet Islands should be similarly protected.

The transport vessel of the Kerguelen Whaling Company, the S.S. 'Jeanne d'Arc,' arrived at the Island with all the paraphernalia for establishing a whaling factory, on the 29th of October, 1908, coming to an anchor in Gazelle Basin, a fine harbour situated centrally on Kerguelen Land. During the fortnight following, the vessel visited a great many bays looking for a suitable site for putting up the factory, which finally was established to the west of Long Island in Royal Sound, thus named by Captain James Cook in 1776. On every sandy beach

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† For explanation of the Plates, see p. 443.

of any extent a huge bull Elephant-Seal, the beachmaster of the old-time sealers, was found to be in possession of a herd comprised of females and youngsters—dams and pups—whilst on smaller beaches, and lolling about on the grass-covered plains above the beaches, were flocks of male Elephant-Seals of various ages and dimensions, termed “pods” by the sealers.

The dams were all brown in colour, measuring from seven to about eleven feet in length, and rather emaciated after suckling their pups, who were in splendid condition, almost bursting with fat, and covered with a pretty silver-grey coat of short hairs. The beachmasters were most imposing looking, compared with their offspring, among which the young bulls measured as much as seven feet in length, whilst the females were no more than five feet long. The guardians, or “sultans,” of the harems were, in most cases, dark brown, like the dams; though some were dark grey in colour. On some beaches a solitary, dun-coloured bull was seen, who, like the beachmasters, was scarred from many a fight; and among the “pods” of variously sized grey bulls, fighting was the order of the day, combats being waged at all hours if the sun was not out, and for the mere pleasure of battling; the hoarse bellowings of struggling bulls being audible at night as well.

In the course of a week several anchorages on Kerguelen Land were visited by the S.S. ‘*Jeanne d’Arc*,’ and about the 6th of November the beachmasters were observed to be very much on the alert to prevent the dams from abandoning the pups: placing themselves between their harems and the water. Whenever a dam tried to pass, the bull simply crushed her down, and he would even administer a bite; but whilst he was thus engaged another dam would watch her chance, and slip past him into the water. With angry bellowings the beachmaster would try to intercept the runaway; but no sooner did the dam kept down by the bull feel the pressure diminish, than she, in her turn, slipped away, and there the baffled Sultan stood, bellowing forth his rage at the escape of his odalisques.

The beachmasters were found to measure from about 18 to 21 feet in length; and had always a well-developed proboscis, which is an enlargement of the snout more nearly resembling that of the tapir than the trunk of an elephant; whence, however, is derived the name “Sea-Elephant.” As long as a bull is undisturbed this “proboscis” hangs flabby and limp to one side of the jaw; but when excited, or roused to anger, it becomes rapidly inflated with air and enormously enlarged, the process of inflation being accompanied by short snorts. The bulls, when fighting each other, are very careful to prevent the trunk from being seized, contracting and raising them, as far as possible, out of harm’s way. The dams are entirely devoid of this enlargement of the nose, which is a sign of sexual maturity in the males, and is most pronounced during the rutting period; while it is perceptible in the pups when only seven to eight weeks old.

By the 10th of November only a few cows were left, and it had been noticed that each had but one pup to suckle. In several harems there were a few without youngsters; and these were assumed by us to have been unfecundated. As late as the 21st of the month a dam was seen to have come up to the beach to suckle her pups, and as the youngsters were increasing in fatness for some time after the disappearance of the mother seals to recoup their strength after the exhausting strain of suckling, the dams had evidently returned, now and then, to the beaches before finally abandoning the pups. After Christmas the cows began to reappear, all being in fine condition after their voyage of recuperation, some arriving even earlier, and they now went far up on land to loll about among the bulls changing their coats, and growing slim again, until the month of April when the great exodus of the Elephant-Seals took place.

In the month of November the weather was fairly fine; and the pups which, on the departure, or rather the disappearance of the dams, had withdrawn from the beaches and collected on the green slopes above, were seen by the end of the month to approach the water again. The beachmasters had remained to guard their youngsters, and were very prompt to come to their assistance when teased by us. Indeed those bulls, which had been harassed and troubled by the men, had at last become quite furious, so that the sight of a man was sufficient to drive them into a towering rage.

Whilst lying on the slopes, the pups were seen to charge each other in clumsy hops, and express their feelings in a kind of hooting when catching each other up. The male pups also tried to fight one another; but on raising their fat, round bodies they generally tumbled over; and when teased the nose would be puffed up twice its original size. The quivering of the muscles of the face gave the otherwise docile physiognomy of these youngsters quite a ferocious aspect.

They had decreased considerably in fatness, though grown in length when mustering on the beaches about the 3rd of December: and by the 10th the beachmasters, who were very much reduced in bulk, and who occasionally would disappear for a couple of days, doubtless to seek some food, took their departure with their offspring. In the month of February the pups reappeared, the males having grown to a length of about nine feet, whilst the females hardly measured more than seven feet in length.

The "pods" of bulls or bachelor seals, which on our arrival were seen on the beaches and the flats above, disappeared at various times to feed themselves up, and on their return, after about two months' absence, they resorted far up on land, to spend the remainder of the summer basking in the sunshine on the slopes and plains above the beaches, shedding their hair and growing thin again; many were seen in the miry troughs or oval hollows made by generations after generations of seals, and others

in bog-holes, chiefly above Cape Digby on the lowland, where the animals were wallowing about like so many crocodiles. Fighting would be the usual pastime in rainy weather; but with the sun out, they were chiefly engaged in throwing up mud and sand on to their backs with a backward sweep of the fore-flippers, so that the body was entirely covered. It being too hot to fight, they would also chase each other about and play at pairing. Instead of going up the slopes some seals seemed to prefer lying among the boulders forming the talus, at certain parts of the coast-line, and the grey, clumsy shapes of the animals were difficult to distinguish from the boulders.

By the end of March, and in the beginning of April 1909, the Elephant-Seals were coming down to the beaches again: travelling leisurely, and having bouts of contests as shown by their tracks and the downtrodden mud.

The gathering of the clans took place on the beaches, the seals departing in companies on their four to five months' tour of migration, but unfortunately it was impossible to ascertain if the males and females travelled together or separately. By the 1st of June the beaches had become deserted; but some seals, males and females, were seen to remain behind and winter over, the animals probably suffering from some disease or other. Snow did not affect them much and they were lying on the beaches as well as in the shallows, covered with snow, and looking like so many logs of timber. When asleep in the water the heads of the seals were sometimes visible, and at other times submerged, and for hours they would remain asleep without stirring. When a snap of frost set in the beaches were deserted, the temperature of the water being more congenial than that of the air.

It has been mentioned that after their tour of recuperation the seals were in splendid condition: and that they travel far has been proved; the late Captain Robert Falcon Scott having observed Elephant-Seals at South Victoria Land in latitude $77^{\circ} 50'$ South, during the Antarctic summer. The animals fed themselves well when travelling, as shown by their sleekness when hauling on land again; and when returning after their five months' voyage of migration, the seals were in even a better condition. Their route is unknown, as no congregations of seals have ever been met with by vessels "running the easting down" in the latitudes of the roaring forties, and the probability is that these animals resort to the regions of the pack-ice during the winter, unless they perform a round voyage, like the hump-back whales, or follow the route of migrating fishes. They may, of course, visit unknown feeding-banks; but the pack-ice seems a more likely region where an abundance of food may be found, and the seals are safer from their chief enemy, the prowling *Orca gladiator*. Several of these ferocious "Dolphins" were seen cruising in the fjords of Kerguelen Land, and many a seal had deep cuts which only could have been inflicted by a powerful beast like the "Killer-Whale."

Several Elephant-Seals were seen during the winter in the various anchorages resorted to by the whalers in bad weather, a few Crab-Eaters and one Ross-Seal, as well as a small number of Sea-Leopards, also having been observed, and specimens secured for Museum purposes.

On the 28th of August 1909 three large, grey bulls hauled up at Swain's Haulover, a neck of land separating Swain's Bay from the fjord to the west of Long Island, in Royal Sound, where the whaling factory had been established, and about $2\frac{1}{2}$ miles distant from the latter. The weather had been, and still was, abominable, and the seals disappeared again. Tracks in the snow showed that they, or some others, had been up a day or two earlier, but none were seen again until the 3rd of September, when several "hauled up" at Swain's Haulover, as well as in Royal Sound, and at Greenland Harbour Haulover, which separates this harbour from an arm of Royal Sound. The new arrivals drove the bulls that had wintered over, and which were very thin, compared with the others, away to the corners of the beaches, or compelled them to seek another beach, and they then commenced to battle between each other for the supremacy, which meant the possession of the beach. The weather was most uncongenial however, the thermometer only registering $30\frac{1}{2}^{\circ}$ F., though the sea-water was much warmer. On this account the fights were rather half-hearted, and the water was preferred.

In the course of a week an increasing number of large bulls hauled up: and on the 11th of September a few dams reappeared. The battles between the rival males now began in real earnest, the arrival of the females adding a zest to what previously seemed a mere pastime. The combats now assumed a sanguinary and decisive character. It was always bull to bull, and whenever a large bull without provocation attacked a weaker one, others would come to the assistance of the latter, and hurl themselves at the bully. The duels were fought in the shallow water until the bulls were, so to speak, sorted out in pods of equal strength and dimensions, and at last only one or two remained, the others taking themselves off, and away from the victorious bull, who took up his position among the dams. At Swain's Haulover two fine bulls lingered in the shallow water without ascending the beach. Both had come out as victors over their rivals, and both had had several trials of strength.

What may be called real water-pantomimes had been witnessed by us: the pelting of the sundry fighting bulls with stones having nonplussed the animals to such an extent that, when a stone hit one, the beast would thrust his head into the water after the stone, and on finding what had given him the stinging blow, he looked round in a dazed way and next furiously went for the nearest of his compeers.

It was rather puzzling to see that neither of the two bulls took possession of the beach, although an increasing number

of dams were hauling up, but on the 14th of September the riddle was solved—our friend of last year, the Sultan, made his appearance.

This special bull, and also one in Seelhorst Harbour, near Gazelle Basin, on the east coast, had been the objects of much harassing by our people, both being fine brown specimens about 20 feet long, and both possessing a mutilated proboscis, which distinguished them from their confrères. No sooner did the Sultan of Swain's Haulover, as he had been named, perceive his tormentors of the previous season than he made for us in eager strides, and a scene followed similar to others that had taken place, and probably remembered by the bull, as no provocation whatsoever had been offered by us, the remembrance of last year's harryings rankling in his memory no doubt.

Hurling his ponderous body along, the dark brown, eager bull, without uttering a single snort, evidently had the intention to run the object of his attack over and crush it, and great was therefore his surprise when it disappeared, the man in front having quickly slipped aside. The discomfiture of the beast was apparent as it came to a sudden stop, the inflated proboscis dropping, and a loud snort being emitted. Raising himself on his fore-flippers the bull lifted his head with the snout pointed skywards, and, looking over his back and turning his head slowly from one side to the other, a searching glance was directed backwards and sideways. The astonishment of the bull was great when he saw his enemy standing behind him, so to speak, and on getting a smart blow from a stick on his hind-flippers his surprise and disappointment gave place to a most sudden outburst of fury.

With bulging, blood-red eyes, and inflated proboscis trembling, a succession of stentorian snorts and gurgling roars came from the vibrating snout and open mouth of the bull; and on getting a second stinging cut he flopped down and curved his back, whilst at the same time the hind-flippers were thrown up, opened out, and swung to one side, imparting a momentum to the body which, pivoting on the fore-flippers, was turned with a grand sweep in almost a semicircle until he was again facing his adversary. He was undecided what to do it seemed; but a blow on the head roused him to action, and with a magnificent motion he rose from the ground, towering up to a height of 10 feet, and looking most imposing as he thundered forth his fury, which was genuine enough, and with which his whole body was shaking.

It is in this magnificent posture that the battling bulls pose, for some seconds, when challenging each other to combat; and they next hurl themselves at one another with all the momentum they can possibly impart, clashing together with a curiously soft thud, and with such force that one expects the oil to squirt out of the pores of the skin. Seizing hold of each other with their fore-flippers, the antagonists sway about, attempting to gouge out an eye, or seize the proboscis, both being careful to contract this appendage, and turn it upwards out of reach. When trying

to bite each other on the sides of the neck, the animals incline their heads towards the threatened side, and the foldings produced by this movement in the skin make a good bite difficult. Nevertheless, deep bleeding gashes are inflicted, which, however, heal quickly, and rarely fester. The fight ends, as a rule, in mutual exhaustion: the bodies of the combatants finally cannoning off each other, and dropping to the ground.

At times the combat would be renewed until the weaker one gave up the fight and took himself off, gashed and bleeding, but mostly the bulls were seen to separate, unless fighting for the supremacy of the beach.

The temper of the Elephant-Seals is normally docile; and by slowly approaching a sleeping animal, and waking it up without any undue noise, one could come quite close up to a seal, and even sit on it, and scratch it with one's cane; the soft eyes, after an almost friendly glance, closing again. If frightened the pale green pupil of the eye, set in a brown iris, would become blood-red however, a mist of tiny drops of blood gradually filling the pupil, a hue which was also assumed when a seal was angry. Tears came into the eyes when, on waking an animal suddenly, the abrupt opening of the lids exposed the eyes to the light; but when harassed a seal would also shed tears, and the pupil then changed from pale green into blood-red.

By the 20th of September the dams hauled up in force, some arriving singly, but generally they came in companies, and on the 24th the first birth took place. The weather was cold and snowy however, and only a few dams were delivered during the two following days. On the 27th and 28th the wind went northerly, with the temperature of the air rising from 33° to 44° and 52° F., and the greater part of the pups were then produced, but as late as October 7th what appeared to be new-born pups were seen in a bay on the South Coast of Kerguelen Land, though only a few, the arrival of the dams being belated.

The delivery of the pups took place close to the sea, and the travail of the dams did not last longer than about five minutes, the heads of the youngsters appearing first, and each dam only producing one pup. The loss of blood was slight, but the delivery was attended with pain, and cries of distress were uttered at certain moments, the dams facilitating the event by movements of the body. With a sweep of the hind flippers the umbilical cord, which remained attached to the youngster, was severed. It gradually dried up, and had a length of from two to three feet. The female pups were, at birth, about three feet long, whilst the males measured as much as five feet in length; all being covered with jet-black, curly hair, and presenting more the appearance of a chameleon than that of a seal.

The *patresfamilias*, as well as the other bulls, were quite disinterested in what was taking place, although they must have been cognizant of it, as their moustaches and nostrils were moving.

The growth of the pups was astonishing: day by day one seemed to notice the progress, and in about 10 days they had more than doubled their bulk and weight. No attempt was made to seize a youngster and weigh it, but on comparing the size of some of them with that of a man, the estimate was arrived at that the pups in question weighed 180 to 200 lbs.; and at birth from 65 to 80 lbs.; the largest male pups 85 lbs. There was a preponderance of females in nearly all harems; but no certain ratio could be determined. When suckling the youngster, the mother-seal reclined to one side, offering the nipples protruding through two holes—one on each side of and equidistant from the navel, as well as in line with it—to the pup, who, after having sucked his fill, painfully dragged himself, with the heavy head bobbing up and down, into the water; the dam following up and placing herself alongside of the youngster, who rested with his fore-flippers on the shelving bottom, and both animals facing landwards. When, as often happened, the slight rough of the sea drew the pup out, and he lost the support of his flippers, the head became submerged. Immediately the dam swept the youngster up, so that he again recovered his footing. If prevented from getting into the water the pups vomited the milk. According to the American authority, Mr. N. W. Elliott, in regard to the Pribyloff Islands seals, they become land-sick; digestion, which must take place while the pup is in the water, having been prevented.

In the third week after their birth the jet-black pelts of the pups changed into brown, the black curly hairs dropping out, and brown, straight hairs taking their place, the coats being thick and rough. Gradually these were changed into the pretty silver-grey coats, which the pups had when leaving the beaches on about the 10th of December, but which, on their return in February, had assumed a darker hue.

On the 17th of October the pairing of the Elephant-Seals was observed, this event taking place when the first circumnavigation of Kerguelen Land was made by us. In Thunder Harbour, near Sadole Island, on the West Coast, where a party of men had been landed to capture the Fur-Seal,—which was believed to visit this part of our domain, but which proved not to be the case, only a couple of these seals being seen, and a small one captured—a curious commotion was noticed on the 16th of October among the hundreds of Elephant-Seals that were lying on the plain above the beach. Large bulls were seen to descend, or rather to tumble down, the steeply shelving beach from the plain, gashed and bleeding, to dive into the sea and disappear; whilst other powerful beasts were coming out of the water to ascend the beach and making their way up to the plain, whence a continuous roaring of bulls was heard, and the sharp agonized yelps of pups and dams. From an island, and at a height overlooking the harbour, the plain was dimly visible through the mist; and the huge shapes of careering bulls were discernible, the animals

coming to a sudden stop amidst the harems. Fierce fights between the bulls lying outside the herd were taking place, and occasionally an immense bull was seen making his way through the seals. Waning daylight, and the necessity for finishing a rough survey of Thunder Harbour, and taking soundings, prevented a visit to the plains, but next day, in Christmas Harbour, the riddle was solved.

The S.S. 'Jeanne d'Arc' had called here on the 24th of December, 1908, in order to take a couple of Sea-Elephants to the Durban Zoological Gardens, and two pups were most unexpectedly secured, a small bull being too tough a customer to tackle. As the migration of beachmasters, with their pups, had been noticed to happen on the 10th of December, it became evident that the season's youngsters did not abandon the beaches simultaneously with their sires, but that the latter left for the most part when it suited them, to a certain extent, together with their pups.

In Captain Cook's Christmas Harbour, two fine bulls with their harems occupied the beach, separated by a space of about 500 feet. The same commotion, but on a much smaller scale than what dimly was observed in Thunder Harbour, and which up to the day before had never been seen anywhere since the arrival of the S.S. 'Jeanne d'Arc' at Kerguelen Land, was also raging among the seals lying on the beach in this anchorage, and, on getting ashore, the reason was discovered—the cows were "in heat." Fierce, sanguinary battles were fought between the bachelor bulls lying in the shallows, the water shining crimson-red in some places, while rolling bellowings mixing with the savage hootings of the obsessed beasts resounded between the hillsides. On the beach, the two Sultans were standing alert and threatening, ready to repulse an aggressor; both mutually concurring not to poach on each other's preserves, and watching the approach of the boats with evident concern. Suddenly one of them was seen to face about, pivoting his body in a magnificent sweep on his fore-flippers, and gallop madly into his harem, where he disappeared from sight, and on gaining the beach and coming through the crowd of pups and dams we found the bull serving one of the latter.

The commotion among the "water-bulls" became pandemonium. The frenzied creatures went blindly for each other, digging their sharp incisor teeth into each other, and careering about; the sound of their roars and bellowings filling the whole harbour. One, more venturesome than the others, ascended the beach and made for the nearest cow, which he tried to ravish; the unwilling harem beauty, with loud cries of distress, making her lord aware of the situation, and appealing to him for assistance. Having satisfied the call of the other dam, the harem master came bounding along, running the offender down, and crushing him with his weight so that the underlying bull screeched with terror or agony, whilst making frantic efforts to

wriggle away, in which he finally succeeded, and wobbled into the water again, so much wiser, if not better, after his futile raid.

The Sultan of the other seraglio had in the meantime driven off a slightly smaller bull after a fairly severe trial of strength, and was found lying on the ground, recovering his breath, when he spied the two-legged intruders coming along. Raising himself on his fore-flippers the bull lifted his head, and with the snout pointing to the zenith, turned his head slowly from side to side, taking a scowling look at us, and after what must have been a satisfactory scrutiny, lying down again.

On walking among the inmates of the harem, a black dead pup was found and later two more, which the prancing bulls must have crushed in their mad careering through their harems. The Sultan, probably being aware of our heavy footfall on the hard sand, would occasionally rise to have a look round, and suddenly he became alert, the proboscis, which had been hanging limp and flabby, being inflated to a size which exceeded anything previously seen. Up went the head and with the moustache bristling, and eyes turning blood-red, the bull slowly moved his head about, the proboscis vibrating, and saliva running from the open, pink, cavern-like mouth. The posture of the seal was one of tense concentration, and all at once he threw up his hind-flippers, as usual with the animals when making a grand swerve, and bounded off through his harem, the dams and pups scuttling out of the way of the prancing bull with terrified yelpings. Coming to a stop before a dam whose youngster had scrambled well out of the way, and who seemed to be waiting for her master, and inviting him by twisting her body about, the bull with a loud snort seized the dam with a fore-flipper and served her.

The bulls in the water, who fought fiercely with each other for the privilege of being onlookers, as the men said, must also have received the silent call, as pandemonium again reigned among them, until the bull had satisfied the demand of nature. Within about 45 minutes the two beachmasters served each three dams, and every time the call came from different cows. Had all six made their demand on the services of the bulls at the same time, those in the water, which were equally possessed by the pairing instinct, would have ascended the beach and satisfied the calls of the dams.

The following day the pairing of the seals in Christmas Harbour continued, and in all the bays which were visited on our return to the whaling station—when large harems were found,—the bulls were engaged in satisfying the calls of their dams, of which none were seen to be served twice. On beaches where only a few dams formed the harem no pairing was observed, this act, no doubt, having taken place before our arrival.

In Royal Sound a beachmaster had been vanquished by a bull, which had successfully contested his supremacy. The fight had

been savage, bout after bout having been fought, according to the testimony of the men from the whaling station, who had been deputed to make tours in one of the motor boats of the Kerguelen Whaling Company, to observe the seals. The two rivals had kept up the contest for nearly 40 minutes, and the beachmaster was at last vanquished. He was almost unable to move, and one of the incisor teeth had gone, the jaws of the combatants having become interlocked, and only released by the snapping of the incisor of the beachmaster. Gashed and streaming with blood, the defeated Sultan then dragged himself painfully to the beach, and dived into the water, the wake of the animal as he swam away being crimson-red. The victorious bull, who looked only a degree less frightful than his late opponent, had taken possession of the harem, that is, he simply dragged himself in among the dams, being almost spent, and went to sleep at once. Some hours later, the motor boat having in the meantime visited other harems, the bull was observed to have recovered his mettle, and was on the *qui vive* when the boat appeared, though no pairing took place as the men passed the beach on returning to the whaling factory.

The Sultan of Swain's Haulover had also had his hands full in coping with the exigencies of the situation; but had come out victorious in all contests, although one was almost a draw. Had he been obliged to wage a similar combat soon after, the men opined, he would hardly have come out of the battle with the palm of victory.

What may be termed the rutting period of the Elephant-Seals began on the 16th of October, when the inexplicable commotion among the seals in Thunder Harbour was noticed, though it may have commenced two to three days earlier, and it lasted until all the dams in each harem had been satisfied. The mature bachelor bulls, compelled by the pairing instinct, came to contest the supremacy of the beachmasters, who by right of superior strength and size, and by right of conquest of course, had occupied the beaches and were harem-masters. The dams in each harem requested the service of their masters at different times, and not simultaneously, every dam being served only once. They evidently roused the pairing instinct of their respective masters by emitting a distinctive odour, imperceptible to the human sense of smell, and a call, which also reached the water-bulls, equally possessed with the pairing instinct, and which drove them to frenzy.

During the rutting period it was seen that the beachmasters received the call not only from mature cows, with or without a pup, but also from what appeared to us to be immature females. These females were of an almost uniform size, not more than eight feet in length, of a slender shape, and born during the last week of September of the previous year. These female Elephant-Seals when slightly more than a year old are then in heat and

paired. The bulls of the same age were naturally the smallest in the herds, but had outstripped the females in growth by as much as three feet in length. Like their older confrères they were excited by the pairing instinct, fighting furiously with one another when the call of the dams was sensed by them. When only five months old these young males had been seen playing at pairing, on their return to the beaches after their first voyage of recuperation under the guardianship of their sires. Their seniors, however, also indulged in this habit, but seldom troubled a female seal, attempted overtures being promptly and indignantly repulsed.

The dams had produced their pups about the 27th of September; their fecundation took place about the 16th of October, and they would again give birth to their youngsters about the 27th of September the following year. The period of gestation is thus about 49 to 50 weeks.

On the 2nd of November the slaughter of the seals was ordered to begin, those at Swain's Haulover and in Seelhorst Harbour to be spared for further observation purposes, and the men were also ordered to spare all dams. The pups were almost bursting with fat, and most of them had changed into silver-grey coats; whilst the mother-seals were emaciated from suckling their youngsters; but the bulls were in first-class condition. By the 8th of the month the dams began to abandon their pups, having produced them about the 27th of September. Thus the period of lactation lasts about six weeks.

In the season of 1909-10 the Elephant-Seals were observed to leave the beaches, and return about the same dates as during the season of 1908-9; and be it noted, as in the two following whaling seasons, only 82 Cetaceans were captured in 1910, and about the same number in 1911-12, the Kerguelen Whaling Co. would have been obliged to go into liquidation but for the "successful" sealing of those seasons. But as a consequence, in 1913, there would only be a small remnant of Elephant-Seals left to reproduce themselves. How far this remnant has succeeded in recovering—if it has been able to recover—during the decennium which has passed since the slaughter of the animals ceased, is difficult to conjecture. It is by no means improbable that the existence of these seals has been jeopardised through the strain which the stock has suffered during three seasons' intense hunting, as all the large and virile bulls would have been killed on account of the greater yield of blubber from such individuals. Consequently only young bulls would be left, and the offspring of such animals, deficient in virility, would be of an inferior stamina compared with the old, extinct stock. It was seen by us that as much as 35 per cent. of the pups in a harem succumbed to the dangers of the first voyage of migration, and the percentage will be much greater with seals of inferior stamina and vitality. Although the capture of the animals would cease automatically

with their scarcity which rendered any venture on a large scale unprofitable, even after a close period of ten years, it is doubtful whether the Elephant-Seals of Kerguelen Land would be preserved from extinction, sickness and the dangers of migration being important factors threatening the lives of the young seals.

EXPLANATION OF THE PLATES.

PLATE I.

- Fig. 1. Young Bulls fighting.
2. A Bull with inflated proboscis.
3. The Challenger.
4. Bull with deflated proboscis.

PLATE II.

- Fig. 1. Elephant-Seal calling.
2. Young Elephant-Seals resting on the slopes above the beaches.